

Rec'd 3/11/65
R10

PLI-82

March 11, 1965

Amendments to Design Plan, Contact Duplicating and Reseau Printer, submitted December, 1964.

The following amendments are submitted to up-date the Design Plan prior to formal approval as requested by the technical monitors on March 5, 1965.

1.0 Page 5. Para. 5.

Add: Power to the warning horn may be turned off inside the Printer by a maintenance man, but will not be readily accessible to the operator.

2.0 Page 7. Para. 2.3.

Add: Industrial Design of the Printer differs from renderings A-2 and A-3 in that modifications have been made to eliminate flat surfaces, breaks, and ledges so as to provide a more easily cleanable configuration. See Industrial Design drawings dated March, 1965 which are included.

3.0 Page 7. Para. 2.4.2.

Delete: "Provisions will be made ---- at desk level".

Add: Provisions will be made for controlling panel illumination under safe-light conditions from full-off to maximum. The Control Panel and Viewing Panel will be red-lighted for compatibility with typical duplicating films.

4.0 Page 14. Item 4

Add: , such as S0-267.

5.0 Page 14. Item 7.

Delete: Exposure in ---- that direction.

Add: Exposure of each area covered by the multiple source system will be adjusted to the straight line portion of the D log E curve of the duplicating film.

6.0 Page 14. Item 8.

Delete: Printing speed ---- duplicating film.

Add: Printing speed to be demonstrated on a selected duplicating film typical of customer usage, such as #5427.

7.0 Page 14. Item 9 - No longer applicable. Delete.

8.0 Page 14. Item 11.

Delete: Banding or mottling ---- minimum of .02 density.

Add: Banding or mottling will not detract from image quality.

NGA Review Complete

STAT

March 11, 1965

9.0 Page 21. Para. 2.8.1.

Delete: It is understood ---- of panoramic photographs.

10.0 Page 21, 25. Para. 2.8.1.

Delete: Thus, it must be pointed ---- but for other types of photography ---- single exposure.

Add: Thus, it is pointed out that the incremental exposure technique employed will correct for longitudinal density variations.

11.0 Page 30. Para. 2.10.

Delete: It is planned that a roll ---- on the roll for future sizes.

Add: It is planned that individual sheet masks of thin metal or plastic will be supplied with appropriate cut-outs for various frame lengths and widths. Location of the masks will be directly on the printing platen beneath the negative film. A recess or locator pins will be provided for mask registry. Mask format for each specified width of film will be as stipulated by the program monitors, and additional blanks will be provided for future sizes.

12.0 Page 31. Para. 2.11.2.

Delete: Glass, Items a.through e.; Items a.through g.

Add: Revised specifications dated February 4, 1965 as attached.

13.0 Page 33. Para. 2.12.

Delete: ---- will insure identical superposition of the grid lines on all future duplications of the same negative frame.

Add: ---- will insure a uniform relationship of grid lines to negative frame fiducial or all duplicate prints.

14.0 Page 35

Change slot-punch viewer drawing to show X and Y cross-hair lines.

15.0 Page 37. Para. 2.13.1

Delete: The enclosure design ---- adjustable pawl fastener.

Add: Line filters in the electrical power lines will be provided to minimize conducted RFI.

16.0 Page 40. Section 2.14.

Delete: Paragraphs 2.14.1 and 2.14.2.

PLI-82

-3-

March 11, 1965

17.0 Page 49. Section 3, Para. 3.3.

Delete: ---- having nominal widths of 70 mm, 5", 6.6", 8", and 9 $\frac{1}{2}$ ". Automatic cutting of the duplicating film is not a requirement.

Add: ---- having nominal widths from 70 mm to 9 $\frac{1}{2}$ " wide and lengths up to 500 feet.

In "Addition" 18.0 Page 49. Para. 3.4.

Delete: ---- may be on-line at intersections ----.

19.0 Page 50. Para. 3.5.

Delete: ---- film widths of 70 mm, 5", 6.6", 8" and 9.5".

Add: ---- film widths of 70 mm to 9.5".

20.0 Page 51. Para. 3.18.

Delete: Entire paragraph.

21.0 Page 52, Para. 3.24.

Delete: Entire paragraph.

In "Addition" 22.0

RESEAU GRID SPECIFICATIONS

February 4, 1965

- 1.1 Index of Refraction: $n_d = 1.523$ (soda lime) measured at Sodium D-line. Per MIL-SPEC DD-G-451.
- 1.2 Blank Size: $10\frac{1}{2}" \times 31" \pm .010$ inches
Format Size: $9\frac{1}{2}" \times 30"$ minimum.
- 1.3 Thickness: $.360" \pm .0075"$.
- 1.4 Color: As free from color as possibly, typical of Soda-Lime.glass.
- 1.5 Light Asborption: 88% transmission of "white light" (400-700 nm). Radiant energy transmission of 77% minimum.
- 1.6 Flatness: ± 10 microns when set up for ruling.
- 1.7 Parallelism: 1 minute of arc when checked in accordance with Par. 4.2.3 of MIL-0-13830.
- 1.8 Bubbles: There shall be no more than 25 bubbles visible to the unaided eye (approximately 10 microns) in the grid format. No bubble shall exceed 500 microns, and the grid shall be oriented to avoid such visible bubbles at lines or intersections. The highest quality blank shall be selected by examination of a large quantity of blanks.
- 1.9 Scratches and Straie: Shall not exceed one micron in width or five microns in length and no more than one per square cm. of surface area. Straie shall not exceed that of Grade 'C' glass per JAN-G-174.
- 1.10 Digs, and Other Surface Blemishes: Shall not exceed 2.5 microns in diameter and no more than one per 25 mm. square.
- 1.11 Edges: The two longitudinal edges are to be polished to allow edge-lighting inspection.

Reseau Grid Lines

- 2.1 Format: Grid lines shall be spaced 1 cm. apart ± 4 , -0 microns, over the entire grid surface and shall be at right angles at intersections.
- 2.2 Line Width: 10 microns, ± 3 , -0 microns.
- 2.3 Line Depth: Nominally 1 micron, $\pm .5$ microns.
- 2.4 Lines to be etched, filled with metal or epoxy, ground flush, and to have an optical density of at least 3 density units.
- 2.5 Intersections: Grid line intersections are to be sharp with minimum radii, and accurate to maximum error of ± 2 microns relative to the center lines of the Reseau grid.
- 2.6 Coordinates: Every other grid line shall be lettered laterally and every other grid line shall be numbered longitudinally. Numbers and letters shall be next to the lines but not at intersections. Size of numbers and letters shall be 0.04-inch, ± 0.00 , -0.01-inch. Letters shall be all capitals and be of Gothic or Spartan, block type. The numbers are to be next to every other line along the far 30.5-inch edge and starting from the left. The letters shall be along the lateral center line of the grid.
- 2.7 Grid Coating: Type, thickness, index of refraction, etc., to be specified later, if a coating is determined desirable.
- 2.8 Durability: Wear characteristics of the grid lines shall be satisfactory for the intended purpose.
- 2.9 Frame: Binding frame design to be separately specified and negotiated at a later date.

Revised
RPL

PLI-82

March 19, 1965

Addendum to Amendments to Design Plan, Contact Duplicating and Reseau Printer, submitted December, 1964.

-18.0 Page 49.

Add: "numbers and letters may be adjacent to the lines but not at the intersections and close enough to prevent confusion."

Add Item 22.0

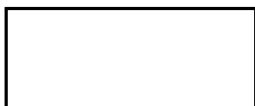
Paragraph 3.4.2

Delete: "and a density range of .2 to 3.2."

Add: and a negative stock density of 1.0. The lines will be legible when printed through a broad range of densities.

Proj. 997113
23 Mar 65
RFD

STAT



March 11, 1965

STAT



Dear Russ:

Enclosed is a preliminary copy of the "Installation Engineering" sheet, filled out as you requested.

Truly yours,



STAT

HB:jb
Encl.

Engineering Leader

PRELIMINARY

INSTALLATION ENGINEERING

HIGH RESOLUTION STEP & REPEAT PRINTER

Page 997113
Data as of
11 Mar 65
File RPD

I. INSTRUMENT

A. Name High Resolution Step & Repeat Control PrintingB. Manufacturer C. Contract Number 821

II. PHYSICAL FEATURES

A. Number of Component Parts RPD 500-1

B. Dimensions of the Largest Component Part:

Length 4-8 Ft. 6 0 In. Height 2-6 Ft. 0 0 In.Width 1-3 Ft. 6 0 In.C. Weight of Largest Component Part +100 lb. 2000 lb.D. Total Weight of Instrument 2,000

E. Overall Dimensions Assembled:

Length 8 Ft. 0 In. Height 6 Ft. 0 In.Width 3 Ft. 0 In.

F. Type of Base of Mount:

Flat Three Point Suspension Four Point Suspension xG. Does Instrument have built-in mobility? yesH. Is the instrument particularly sensitive to vibration? noI. Are any special or unusual tools or fixtures necessary or advisable for the installation or maintenance of this equipment? no

III. UTILITIES

A. Electrical:

AC

DC

Voltage 120/208 Volts + 10% VoltsCurrent 20 Amps per φFrequency 60 cpsNr. of phases 3Nr. of wires 4Power required by
equipment7000 Watts WattsType of outlet required: Two Prong , Three Prong Twist Lock x, Permanent Installation

(Hubbell 4-prong, 30 ampere)

Should the equipment be shielded, either from external electro-magnetic signals, or to prevent interference with other equipment?

No. A ground bus for the RFI filters using #6 (AWG) wire to a
good earth ground should be provided.

B. Air Conditioning:

Room temperature 70°F ± 2° F. Humidity 50% R.H. ± 5%
 Output of Instrument 24,000 BTU/Hr.
 If air must be filtered, what is maximum permissible particle size
 in microns? 0.5 micron What particle count? 2,000
 particles per cubic foot.
 Direct connection to instrument? Yes x No
 If yes to above, what is the desired air temperature to instrument?
Same as above
 Should discharged air be ducted separately? yes
 Is discharged air noxious? no toxic? no
 Connector size to instrument 6" Diameter Ducting

C. Plumbing:

Is water required for the instrument? Yes No x
 Water pressure Flow in GPM
 Type of water desired:
 Tap OF + OF
 Tempered OF + OF
 Deionized OF + OF
 Filtered OF + OF Particle size and count per
 unit volume.
 Type of pipe required:
 Galvanized Copper
 Stainless Steel Plastic
 Is floor drain required? Yes No x
 Diameter of drain Galvanized drain
 Plastic drain Glass drain

D. Compressed Air:

Diameter of connectors Type of connectors
 PSI Water free?
 CFM Oil free?

E. Vacuum:

Is vacuum required? Yes No x
 Vacuum required PSIA or (inches) (milli-
 meters) of Hg
 Displacement CFM

IV. REMARKS

In the event additional space is required for environmental conditions
 or utilities not mentioned above, use the reverse side of this form.

STAT *Dist:*
1cy:
1cy:

